SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Amended Rule 1470 - Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines

May 2007

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Rule 1470 was adopted by the Governing Board on April 2, 2004. The primary objective of Rule 1470 is to reduce emissions of diesel particulate matter (diesel PM) from stationary diesel-fueled internal combustion engines. The rule implements the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines that was adopted by the California Air Resources Board (CARB), becoming effective in California in December 2004. The rule was subsequently amended for consistency with amendments to the ATCM. Rule 1470 is equivalent to or more stringent than the ATCM.

Diesel-fueled stationary compression ignition engines are typically categorized as either prime engines or emergency standby engines. Prime engines are stationary engines that are used as part of normal operations in a wide variety of applications such as cranes, rock crushing, and agricultural irrigation. Emergency standby engines are used for emergency back-up electric power generation during emergencies, such as power failures or rolling blackouts, or for pumping water during fires.

PROPOSED AMENDMENTS TO RULE 1470

There are two main changes proposed for Rule 1470. The first is to extend the time owners/operators of new direct-drive emergency standby fire pump engines have to meet state Tier 3 Off-Road Compression Ignition Engine Standards (Title 13 CCR Section 2423). This provision is consistent with the amendments to the state ATCM effective September 9, 2005. The second main proposal is to modify requirements for new emergency engines used in demand response programs (DRP) to ensure consistency with AQMD Best Available Control Technology (BACT) requirements. In addition, an amendment is proposed to clarify requirements for new emergency engines installed on school grounds or near existing schools. Minor administrative changes are also proposed.

Direct-Drive Fire Pump Engines

The September 2005 amendments to the state ATCM for stationary diesel engines extended the time for direct-drive emergency standby fire pump engines to meet Tier 3 Off-Road Compression Ignition Engine Standards (Title 13 CCR Section 2423). While Tier 3 engines are currently available for some applications, they are not yet available for direct-drive fire pumps. Direct-drive fire pump engines are unique and must be modified to include additional redundant systems and electronics for safety and to guarantee the engine will start and perform as required in an emergency. Once these engines are produced, they must have Underwriters Laboratories (UL) and FM Global safety certifications. UL and FM Global listings are an industry standard and certify that the engines comply with National Fire Protection Association (NFPA) guidelines. Therefore, an extension is needed to allow time for production and certification of Tier 3 engines.

Although the primary objective of Rule 1470 is to reduce diesel PM emissions, the rule also contains standards for hydrocarbon (HC), oxides of nitrogen (NOx), and carbon monoxide (CO) emissions for new engines. The proposed amendments allow an additional three years for direct-

drive emergency standby fire pump engines during which they are allowed to meet Tier 2, rather than Tier 3, off-road engine standards for PM, HC, NOx, and CO. PM and CO standards are the same for Tier 2 and Tier 3 engines, so the proposed amendments affect only the HC and NOx emission standards. The amendment is necessary because, although Tier 3 engines are available for some applications, Tier 3 direct-drive fire pump engines are not yet available. Since new Tier 3 engines are not available, the proposed change will allow engine owner/operators of new direct-drive fire pump engines to use new Tier 2 engines until Tier 3 direct-drive fire pump engines become available. After the three year extension of Tier 2 engine standards, or when Tier 3 engines are available, whichever is earlier, direct-drive emergency standby fire pump engines will be required to meet more stringent Tier 3 emission standards.

Demand Response Program Engines

Rule 1470 currently contains provisions for new stationary emergency diesel engines used in demand response programs (DRP) which are programs for reducing electrical demand through the use of interruptible service contracts (ISC). An ISC is a contractual arrangement in which a utility distribution company provides lower energy costs to a nonresidential electrical customer in exchange for the ability to reduce or interrupt the customer's electrical service during a Stage 2 or Stage 3 alert, or during a transmission emergency. On June 6, 2003, the Governing Board approved Agenda Item 24 to update AQMD's Minor Source BACT Guidelines. One of the updates was a provision which prohibits new diesel-fueled emergency internal combustion engines from participating in ISCs unless they meet more stringent minor source BACT requirements for spark-ignition emergency engines. Proposed Amended Rule 1470 incorporates these BACT requirements for new diesel-fueled emergency internal combustion engines participating in ISCs. It should be noted that diesel engines currently are not able to meet the spark-ignition engine BACT level of 1.5 grams/bhp-hr for NOx which effectively prohibits them from participating in ISCs. The Rule 1470 provisions for in-use DRP engines remain unchanged.

Other Changes

Proposed Rule 1470 also contains several administrative changes. An amendment is proposed to remove a date from the requirements for installation of new emergency standby engines to be installed on school grounds or within 100 meters of existing schools. The rule currently limits existing schools to those existing as of April 2, 2004 while the restriction should apply to any school that exists at time the new engine is installed. The date was originally placed in the rule to account for time between rule adoption and the rule effectiveness date. Since these requirements took effect January 1, 2005, the date is no longer necessary. The proposed requirement looks at existing schools at the time an application for Permit to Construct or Permit to Operate is deemed complete, whichever is earlier, for a new emergency standby diesel engine.

A clarification to the definition of "location" is proposed. An administrative amendment is proposed to update a reference to the National Fire Protection Association (NFPA) 25 – "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". The rule currently lists the 1998 edition of these standards. The proposal updates the reference to the 2002 edition of NFPA 25, or the most current edition. This proposed

amendment is consistent with the ATCM. Additional changes of an administrative nature are proposed, such as correcting typographical errors, renumbering, and correcting references.

IMPACT ASSESSMENT

Proposed Amended Rule 1470 may result in foregone emission reductions from new emergency standby direct-drive fire pump engines because it allows owners/operators of these engines to use Tier 2 engines, rather than Tier 3 engines, for three additional years. Tier 3 engines are not yet available for direct-drive fire pumps. The Tier 2 engines have higher emission limits for HC and NOx. A technical analysis of direct-drive diesel emergency standby fire pump engine emissions has been conducted to evaluate environmental impacts of Proposed Amended Rule 1470. A three year extension of Tier 2 standards spans the years 2005 through 2010 since the effective dates are different depending upon engine horsepower ratings. The other proposed amendments are not expected to have any impacts since they are administrative.

Population of New Direct-Drive Fire Pump Engines

The proposed amendment regarding direct-drive emergency standby fire pump engines affects only new engines. Approximately 30 to 40 applications for permits to construct/operate for this type of engine are submitted each year, based on permitting history for the past three years. Since Tier 3 standards are size-specific and the implementation dates for the standards are staggered, the proposed rule amendments are not expected to impact all of the applications for direct-drive emergency standby fire pump engine permits. Therefore, 30 to 40 engine permits each year is a conservative estimate of the impacts. A wide variety of private and public entities owns and operates stationary diesel-fueled direct-drive emergency standby fire pump engines in the South Coast Air Basin. These may include manufacturing, power generation, industrial warehouses, building management, medical facilities, refineries, water treatment facilities, telecommunications and broadcasting facilities, quarries, military installations, and schools.

Emissions Impacts

The proposed amendment for new direct-drive emergency standby fire pump engines may result in foregone reductions of emissions of HC and NOx based on the differences between Tier 2 and Tier 3 HC and NOx standards over a period of three years from the effective Tier 3 compliance date. Foregone emission reductions for NOx and VOC are expected to be small because of the small number of new direct-drive emergency standby fire pump engines permitted each year, the few hours per year these engines are operated for testing and maintenance purposes, and the difference in Tier 2 and Tier 3 standards for NOx (less than 1.9 grams/bhp-hr) and for VOC (less than 0.25 grams/bhp-hr). Since the extension of Tier 2 direct-drive emergency standby fire pump engine standards is staggered based on engine horsepower rating, the highest impact is expected in year 2010 and is estimated to be approximately seventeen pounds per day for NOx and two pounds per day for VOC emission reductions foregone.

Cost Impacts

Proposed rule amendments do not require any additional installations of emission control devices beyond the existing rule. Therefore, no additional expenditures due to proposed amendments to Rule 1470 are expected.

CHAPTER 1: BACKGROUND

INTRODUCTION

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INTRODUCTION

Rule 1470 – Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines was adopted by the AQMD Governing Board on April 2, 2004. The rule implements the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines that was adopted by the California Air Resources Board (CARB) in February 2004 (CARB ATCM), becoming operative in the state as of December 8, 2004. Rule 1470 is equal to or more stringent than the ATCM. For example, Rule 1470 established more stringent requirements than the CARB ATCM for engines located on school grounds or within 100 meters of existing schools.

Diesel-fueled stationary compression ignition engines are typically categorized as either prime engines or emergency standby engines. Prime engines are stationary engines that are used as part of normal operations used in a wide variety of applications such as cranes, rock crushing, and agricultural irrigation. Emergency standby engines are used for emergency back-up electric power generation during emergencies, such as power failures or rolling blackouts, or for pumping water during fires.

PUBLIC PROCESS

A public workshop was held April 12, 2007 to solicit information and suggestions from the public regarding Proposed Amended Rule 1470.

REGULATORY HISTORY

California Health and Safety Code (H&SC) Section 39666(d) specifies that districts must implement and enforce or propose regulations to enact an ATCM no more than 120 days after the CARB adopts or implements it. H&SC Section 39666(d) also specifies that districts may enforce equally effective or more stringent rules than ATCMs adopted by the CARB. As described previously, Rule 1470 was developed to implement the ATCM, as well as to establish more stringent requirements than the ATCM for engines on or near school grounds.

H&SC Section 39658 requires CARB to establish ATCMs for substances identified as toxic air contaminants (TACs). In 1998, CARB identified diesel particulate matter from internal combustion engines as a TAC. In September 2000, CARB approved the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles" (Diesel Risk Reduction Plan). The goal of the CARB Diesel Risk Reduction Plan is to reduce diesel PM emissions and the associated cancer risk by 85 percent in 2020. In addition, in 2001, the Office of Environmental Health Hazard Assessment (OEHHA), pursuant to the requirements of Senate Bill 25 (Stats. 1999, ch. 731), identified diesel PM from internal combustion engines as one of the TACs that may cause children or infants to be more susceptible to illness. Senate Bill 25 also requires the CARB to adopt control measures, as appropriate, to reduce the public's exposure to these special TACs (California H&SC Section 39669.5). The CARB ATCM was developed to achieve the goal of the Diesel Risk Reduction Plan to protect the health of Californians by

reducing public exposure to diesel PM, as well as to meet the requirements of H&SC Section 39658.

Under H&SC Section 39658(b), CARB is required to adopt ATCMs for hazardous air pollutants, as adopted by the United States Environmental Protection Agency (U.S. EPA). Diesel particulate matter is not classified as a hazardous air pollutant although many of the components of diesel PM are classified as such. On February 26, 2004, the U.S. EPA issued final requirements in a National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE NESHAP). The RICE NESHAP targets toxic emissions (formaldehyde, acrolein, methanol, and acetaldehyde) for large (> 500 horsepower) stationary compression ignition and spark ignition internal combustion engines located at major sources of hazardous air pollutants. CARB intends to work with the U.S. EPA to seek equivalency between the RICE NESHAP and the finalized CARB ATCM through the provisions of Section 112(L) of the federal Clean Air Act, as implemented through Subpart E. By implementing the CARB ATCM, Rule 1470 would also implement the RICE NESHAP.

AFFECTED INDUSTRIES

The proposed amendments apply to facilities that are installing new direct-drive fire pumps and new emergency backup engines that would be enrolled in a Demand Response Program. All of the engines would be used in a wide variety of businesses such as manufacturing, power generation, building management, medical facilities, refineries, water treatment facilities, telecommunications and broadcasting facilities, quarries, military installations, and schools.

Based on a 2006 analysis, AQMD staff estimates that there are more than 5,700 facilities with approximately 9,100 stationary diesel-fueled engines in AQMD's jurisdiction. Based on AQMD permit data, there are approximately 635 facilities with approximately 850 direct-drive emergency standby fire pump engines. The proposed amendments are expected to have minimal impacts because they affect only new direct-drive fire pump engines and new engines that would be enrolled in Demand Response Programs. There are approximately 30 to 40 applications for new direct-drive emergency standby fire pump engines each year based on the past three years permitting history. No engines will be affected by the Demand Response Program provisions of the proposed amended rule since current BACT requirements already preclude diesel emergency standby engines from being used in Demand Response Programs.

CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1470

OVERVIEW

PROPOSED CHANGES TO RULE 1470

OVERVIEW

There are two main changes proposed for Rule 1470. The first is to extend the time owners/operators of new direct-drive emergency standby fire pump engines have to meet Tier 3 state Off-Road Compression Ignition Engine Standards (Title 13 CCR Section 2423). This provision is consistent with the amendments to the state ATCM effective September 9, 2005. The second main proposal is to modify requirements for new emergency engines used in demand response programs (DRP) to ensure consistency with AQMD Best Available Control Technology (BACT) requirements. In addition, an amendment is proposed to clarify requirements for new emergency engines installed on school grounds or near existing schools as well as clarification of the definition for "location". Minor administrative changes are also proposed.

PROPOSED CHANGES TO RULE 1470

The proposed changes primarily affect requirements for new emergency standby engines in subdivisions (c) Requirements. A summary of changes follows:

Requirements for New Direct-Drive Fire Pump in clause (c)(2)(C)(iv)

The September 2005 amendments to the state ATCM for stationary diesel engines extended the time for new direct-drive emergency standby fire pump engines to meet Tier 3 Off-Road Compression Ignition Engine Standards (Title 13 CCR Section 2423). While Tier 3 engines are currently available for some applications, they are not yet available for direct-drive fire pumps. Direct-drive fire pumps are unique and must be modified to include additional redundant systems and electronics for safety and to guarantee the engine will start and perform as required in an emergency. Once these engines are produced, they must have Underwriters (UL) and FM Global safety certifications. UL and FM Global listings are an industry standard and certify that the engines comply with National Fire Protection Association (NFPA) guidelines. Therefore, an extension is needed to allow time for production and certification of Tier 3 engines.

Proposed Amended Rule 1470 proposes to extend the time owners/operators of new direct-drive emergency standby fire pump engines have to meet state Tier 3 emission standards, consistent with the September 9, 2005 amendments to the ATCM. The ATCM amendments also allows an additional three years for new direct-drive emergency standby fire pump engines to meet the Tier 4 standards, beyond the Tier 3 standards. This is not being proposed for incorporation in Rule 1470 at this time due to the uncertainty of the dates when engine manufacturers will be able to produce engines meeting the Tier 4 standards.

Although the primary objective of Rule 1470 is to reduce diesel PM emissions, the rule also contains standards for hydrocarbon (HC), oxides of nitrogen (NOx), and carbon monoxide (CO) emissions for new engines. The Tier 2 and Tier 3 standards for non-methane hydrocarbon (NMHC) and NOx and are for combined emissions of NMHC + NOx. The proposed amendments allow an additional three years for new direct-drive emergency standby fire pump engines during which they are allowed to meet Tier 2 rather than Tier 3 standards off-road engine standards for PM, NMHC + NOx, and CO. PM and CO standards are the same for Tier 2 and

Tier 3 engines, so there are no foregone emission reductions for PM or CO from the proposed amendments. Thus, the proposed amendments affect only the VOC and NOx emissions. The amendment is necessary because Tier 3 engines that have the required UL and FM Global certifications for direct-drive fire pump engines are not yet available. Since Tier 3 engines are not available, the proposed amendments will allow engine owner/operators to use a new Tier 2 direct-drive fire pump engines until Tier 3 engines become available for this application. After the three year extension of Tier 2 engine standards, or when Tier 3 engines are available, whichever is earlier, new direct-drive emergency standby fire pump engines will be required to meet more stringent Tier 3 standards. These changes are reflected in clause (c)(2)(C)(iv).

Requirements for New Standby Emergency Diesel Engines Used in Demand Response Programs in Paragraph (c)(7)

Rule 1470 currently contains provisions for new stationary emergency diesel engines used in demand response programs (DRP) which are programs for reducing electrical demand through the use of interruptible service contracts (ISC). An ISC is a contractual arrangement in which a utility distribution company provides lower energy costs to a nonresidential electrical customer in exchange for the ability to reduce or interrupt the customer's electrical service during a Stage 2 or Stage 3 alert, or during a transmission emergency. On June 6, 2003, the Governing Board approved Agenda Item 24 to update the Minor Source BACT Guidelines. One of the updates was a provision which prohibits new diesel-fueled emergency internal combustion engines from participating in ISCs unless they meet more stringent minor source BACT requirements for spark-ignition emergency engines. The emissions requirements for VOC, NOx, and CO now require that new standby emergency diesel engines used in DRPs meet either BACT requirements for spark-ignition emergency engines or the appropriate off-road standards, whichever standard is more stringent for each of the pollutants. Amendment to clause (c)(7)(C)(ii) is proposed to establish these emission requirements. The current BACT standards for stationary emergency spark ignition internal combustion engines are specified in Table 1. It should be noted that diesel engines currently are not able to meet the spark-ignition engine BACT level of 1.5 grams/bhp-hr for NOx which effectively prohibits them from participating in ISCs. The Rule 1470 provisions for in-use DRP engines remain unchanged.

Table 1
BACT Requirements for Stationary Internal Combustion Engines, Spark Ignition

NMHC or VOC	NOx	CO
1.5 grams/bhp-hr	1.5 grams/bhp-hr	2.0 grams/bhp-hr

Date for Existing Schools in Clauses (c)(2)(C)(i) and (iii)

Proposed Amended Rule 1470 would remove a date from the requirements for installation of new emergency standby engines that are either installed on school grounds or within 100 meters

of existing schools in clauses (c)(2)(C)(i) and (iii). For those new engines that are installed near an "existing school", Rule 1470 currently limits "existing schools" to those existing as of April 2, 2004. The intent of this provision is that if a new emergency standby engine is installed near a school, that any school that exists at the time the new engine is installed should be considered. The date was originally placed in the rule to account for time between rule adoption and the rule effectiveness date. Since these requirements took effect January 1, 2005, the date is no longer necessary and has been replaced by a requirement which considers all existing schools at the time an application for Permit to Construct or Permit to Operate is deemed complete, whichever is earlier, for a new emergency standby diesel engine to be installed on schools grounds or within 100 meters of an existing school.

Miscellaneous Changes

A change to the definition for "location" is proposed for paragraph (b)(4) for clarification and to make it more consistent with other engine rules. The definition now reads: "LOCATION means any single site at a building, structure, facility , or installation. For the purpose of this definition, a site is a space occupied or to be occupied by an engine."

An administrative amendment is also proposed to update a reference to the National Fire Protection Association (NFPA) 25 – "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems". The rule currently lists the 1998 edition of these standards. The proposal updates the reference, in subclauses (c)(2)(C)(i)(III) and (c)(2)(C)(ii)(II), to the 2002 edition of NFPA 25, or the most current edition. Administrative changes have been made throughout the rule to correct typographical errors, renumber as needed, and correct references.

CHAPTER 3: IMPACT ASSESSMENT

IMPACTS OF PROPOSED AMENDMENTS TO RULE 1470

POTENTIAL COST IMPACTS

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

COMPARATIVE ANALYSIS

IMPACTS OF PROPOSED AMENDMENTS TO RULE 1470

Proposed Amended Rule 1470 is expected to result in foregone VOC and NOx emission reductions from new direct-drive emergency standby fire pump engines because it allows owners/operators of these engines to use Tier 2 engines, rather than Tier 3 engines, for three additional years from the effective date of the Tier 3 standard or until Tier 3 engines are available for direct-drive fire pumps. This is necessary since Tier 3 engines that have the required safety certifications are not yet available for direct-drive fire pumps. The Tier 2 engines have higher emission limits for HC and NOx (or combined HC and NOx) which will result in foregone VOC and NOx emission reductions. A technical analysis of new direct-drive emergency standby fire pump engine emissions has been conducted to evaluate environmental impacts of Proposed Amended Rule 1470. The other proposed amendments are not expected to have any impacts since they are administrative in nature.

Population of New Direct-Drive Fire Pump Engines

The proposed amendment regarding direct-drive emergency standby fire pump engines affects only new engines. Approximately 30 to 40 applications for permits to construct/operate for this type of engine are submitted each year, based on permitting history for the past three years. Since Tier 3 standards are size-specific and the implementation dates for the standards are staggered, the proposed rule amendments are not expected to impact all of the applications for direct-drive fire pump engine permits. Therefore, 30 to 40 engine permits each year is a conservative estimate of the impacts. A wide variety of private and public entities owns and operates stationary diesel-fueled direct-drive emergency standby fire pump engines in the South Coast Air Basin. These may include manufacturing, power generation, building management, medical facilities, refineries, water treatment facilities, telecommunications and broadcasting facilities, quarries, military installations, and schools.

Emissions Impacts

Rule 1470 contains standards for HC, NOx, and CO emissions in addition to PM for new engines consistent with Title 13 CCR Section 2423. The proposed amendments allow an additional three years beyond the effective date of the Tier 3 standards for new direct-drive emergency standby fire pump engines during which they are allowed to meet Tier 2 off-road engine standards for PM, NMHC + NOx, and CO. PM and CO standards are the same for Tier 2 and Tier 3 engines. As a result, there are no forgone PM or CO emission reductions.

The proposed amendment for new direct-drive emergency standby fire pump engines may result in foregone reductions of emissions of HC and NOx based on the differences between Tier 2 and Tier 3 HC and NOx standards over a period of three years. Foregone emission reductions for NOx and VOC are expected to be small because of the small number of new direct-drive fire pump engines permitted each year, the few hours per year these engines are operated for testing and maintenance purposes, and the difference in Tier 2 and Tier 3 standards for NOx (less than 1.9 grams/bhp-hr) and for VOC (less than 0.25 grams/bhp-hr).

An extension of Tier 2 new direct-drive emergency standby fire pump engine standards for three years will impact the applications received for these engines in the years 2007 through 2010

because the effective dates of Tier 3 standards in Title 23 CCR Section 2423 are different for different horsepower ratings as indicated in Table 2. The highest impacts are expected to be seen in year 2010 due to the staggered dates. NOx and VOC emission reductions foregone are expected to be approximately seventeen pounds per day and two pounds per day, respectively, due to the proposed amendment.

Table 2
Proposed Extension of Tier 2 Dates for New Direct-Drive Emergency Standby Fire Pump Engines

Engine Rating (bhp)	Current Tier 2 Dates**	Proposed Extension
50 – 100	2004 – 2007	2004 – 2010
101 – 175	2003 – 2006	2003 – 2009
176 – 300	2003 – 2005	2003 – 2008
301 – 600	2001 – 2005	2001 – 2008
601 – 750*	2002 – 2005	2002 – 2008

* Engines rated at > 750 bhp have no Tier 3 standards
** Reference: Title 23 CCR Section 2423

No increase in cancer risk is expected because the PM emission standard is the same for Tier 2 and Tier 3 engines, thus, there is no in increase diesel PM emissions.

POTENTIAL COST IMPACTS

Because the proposed rule amendments are not expected to require any additional installations of emission control devices beyond the existing rule, no additional expenditures due to amendments to Rule 1470 are expected.

CALIFORNIA ENVIRONMENTAL QUALITY ACT ANALYSIS

Pursuant to California Environmental Quality Act (CEQA) Guidelines §15252 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for the adoption of proposed amended Rule 1470. The Draft EA concludes that implementation of the proposed project would not result in significant adverse environmental impacts. The Draft EA was released for a 30-day public review and comment period.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity

A need exists to amend Proposed Amended Rule 1470 to extend the time to allow manufacturers to produce and obtain required safety certifications for Tier 3 direct-drive emergency standby fire pump engines during which owners/operators of new direct-drive fire pump engines may install engines which meet the Tier 2 state Off-road Compression Ignition Engine Standards (Title 13 CCR Section 2423). This amendment is needed so that new direct-drive fire pumps can be permitted. Without this time extension and allowing the use of Tier 2 engines, direct-drive fire pumps can not be permitted. Additionally, a need exists to amend the rule to confirm the definition of "location" with other engine rules and to clarify the applicability of BACT.

Authority

The AQMD Governing Board has authority to adopt amendments to Rule 1470 pursuant to the California Health and Safety Code Sections 39002, 39650 et. seq., 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, 41700, and 44390 through 44394.

Clarity

Proposed Amended Rule 1470 is written or displayed so that its meaning can be easily understood by the persons directly affected by the rule.

Consistency

Proposed Amended Rule 1470 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions or state or federal regulations. The proposed amendments are consistent with the state ATCM and AQMD BACT guidelines.

Non-Duplication

Proposed Amended Rule 1470 will not impose the same requirements as any existing state or federal regulations (except that it implements ATCM provisions). The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, AQMD.

Reference

By adopting Proposed Amended Rule 1470, the AQMD Governing Board will be implementing, interpreting or making specific the provisions of the California Health and Safety Code Sections 41700 (nuisance), 39666 (airborne toxic control measures) and Federal Clean Air Act Section 112 (Hazardous Air Pollutants).

Health and Safety Code Section 40727.2

Health and Safety code section 40727.2 requires a comparative analysis. This analysis is in a subsequent section of this staff report.

Rule Adoption Relative to Cost-effectiveness

Proposed Amended Rule 1470 is not a control measure in the 2003 Air Quality Management Plan (AQMP) and thus, was not ranked by cost-effectiveness relative to other AQMP control measures in the 2003 AQMP. Cost-effectiveness in terms of dollars per ton of pollutant reduced is not applicable to rules regulating toxic air contaminants.

Incremental Cost-effectiveness

Health and Safety Code Section 40920.6 requires an incremental cost effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option which would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors. Since the proposed amended rule does not require control of ozone, CO, SOx, NOx, and their precursors, the incremental cost effectiveness analysis requirement does not apply.

AQMP and Legal Mandates

Proposed Amended Rule 1470 is not a measure in the Air Quality Management Plan (AQMP). Proposed Amended Rule 1470 is an air toxic rule that would implement the requirements of the CARB ATCM for stationary compression ignition engines.

COMPARATIVE ANALYSIS

National Emission Standards for Hazardous Air Pollutants

The National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE NESHAP) regulates formaldehyde emissions or CO as a surrogate for hazardous air pollutants. The RICE NESHAP establishes requirements only for large (> 500 horsepower) stationary compression ignition and spark ignition internal combustion engines located at major sources of hazardous air pollutants. Unlike Rule 1470, it is not designed to reduce diesel PM emissions. Currently proposed amendments to Rule 1470 do not impact emissions of toxic air contaminants or CO, and therefore do not duplicate or conflict with the RICE NESHAP requirements.

New Source Performance Standards

The federal New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines regulates only new stationary compression ignition engines. It establishes emission standards for Tier 1 through Tier 4 engines for NMHC + NOx, CO, and PM. The federal standards are similar to or less stringent than the state Off-Road Engine standards. The regulation has specific provisions for new direct-drive fire pump engines for these pollutants and, in all cases Proposed Amended Rule 1470 standards for new direct-drive fire pump engines are equivalent to or more stringent than the federal standards.

AQMD Rules Applying to Stationary Diesel-Fueled Engines

AQMD Rule 1110.2, Emissions from Gaseous- and Liquid-Fueled Engines, which was last amended on June 3, 2005, addresses emissions of NO_x, VOCs, and CO from stationary and portable engines over 50 horsepower. Rule 1470 primarily addresses PM emissions from stationary diesel engines. Proposed amendments to Rule 1470 affect only NOx and VOC emissions from new emergency standby direct-drive fire pump engines which are exempt from Rule 1110.2.

AQMD Rule 431.2 – Sulfur Content of Liquid Fuels, which was last amended on September 15, 2000, prohibits the purchase by stationary source end users of any diesel fuel with a sulfur content exceeding 15 ppm on and after June 1, 2004. This requirement is intended to accommodate emission control technologies which would be adversely affected by higher sulfur content diesel fuels.

Comparison of Existing Requirements to Proposed Amended Rule 1470

As described previously, Rule 1470 adopts the CARB ATCM, which is now operative in the state as of December 8, 2004. Rule 1470 also establishes more stringent requirements for stationary diesel-fueled emergency standby engines located on or near school grounds. Currently proposed amendments to Rule 1470 are intended to incorporate a change made to the CARB ATCM, effective September 9, 2005. As part of the development process for Rule 1470, AQMD staff has sought commonality with the CARB ATCM, with greater stringency in some areas, and the RICE NESHAP.

REFERENCES

REFERENCES

Best Available Control Technology Guidelines, SCAQMD, Revised July 14, 2006.